Montgomery County Council

From the Office of Councilmember Roger Berliner November 13, 2009

Contact: 240-777-7828

Council Vice President Roger Berliner to Help Demonstrate Electric Plug-in Hybrid Vehicle

On Monday, Nov. 16, in Rockville, BGE Representatives Will Show Montgomery Council the Future of Cars

NEWS RELEASE

ROCKVILLE, Md., November 13, 2009—Montgomery County Council Vice President Roger Berliner and representatives from Baltimore Gas and Electric (BGE) at 12 noon on Monday, Nov. 16, will bring to the Council the future of efficient vehicles by bringing a plug-in hybrid vehicle to the Council Office Building in Rockville.

Vice President Berliner and the BGE representatives will brief Councilmembers on the vehicle's technology in the Fifth Floor Conference Room of the County Office Building at 100 Maryland Avenue in Rockville. They will then demonstrate the vehicle—which could get 75 to 80 miles per gallon of fuel—near the fish pond in the rear of the building, just outside of the second floor.

With the advent of smart grid technology, the numbers of plug-in hybrids will likely increase and their integration into society presents certain challenges that owners and their utilities will face. The discussion will cover topics such as how and when the market for this type of vehicles will develop and the potential impact they will have on market.

A plug-in hybrid electric vehicle (PHEV) is a hybrid vehicle that has been converted to enable all electric drive capability by adding an additional storage battery and charger. The conversion lets the vehicle operate using the auxiliary battery and electric motor to drive for the first 30 to 40 miles. When the auxiliary batteries are depleted, the car returns to standard hybrid operation. The additional batteries recharge by plugging into a standard 110 volt outlet. Using the electric drive capability will greatly increase gas miles per gallon and reduce emissions released to the environment.

(MORE)

“The technology in creating more fuel efficient, and better for the environment, vehicles is evolving at a rapid rate,” said Council Vice President Berliner. “The concept of the PHEV offers great potential and a major leap forward. It will be exciting for all of us to learn about the future of cars—and actually see one demonstrated.”

The PHEV is different from standard hybrid vehicles because it has additional battery capacity that allows it to run solely on the electric motor at speeds up to 35 mph until the batteries are depleted. The standard hybrid uses the factory installed on-board battery power and electric drive to operate the car while idling and at slow speeds and to provide additional boost during acceleration. The standard batteries are recharged as the car slows or brakes through regenerative braking.

The PHEV battery should provide about 30 to 40 miles of all electric and/or blended driving range, depending on the driving style, conditions and speed. When the PHEV auxiliary batteries are depleted, the car reverts to standard hybrid operation for unlimited driving with conventional gas fill-ups.

One of BGE’s test objectives is to document the vehicle performance in the driving conditions in this area. The typical Prius hybrid can get 40-45 mpg prior to the PHEV conversion. BGE and other utility companies have found that 75 to 80 mpg is attainable in the PHEV in mostly city driving.

It can take about five and a half hours to recharge a fully depleted PHEV battery when plugged into a 110-volt outlet. The actual time will vary by the amount of charge needed, the voltage and other battery conditions. The charge time is much less if the car has a 220-volt charging system.

The PHEV battery is a five kilowatt-hour lithium-ion battery. BGE estimates that at 14 cents per kilowatt-hour for electricity, a full recharge would cost 70 cents. If the batteries are recharged on time-of-use rates at off-peak times, the cost can be less. At $3 per gallon of gas, it can cost 10 to 20 cents per mile for fuel in a conventional vehicle that gets between 15 and 20 miles per gallon. With a PHEV, the cost per mile on electric can be as low as five cents per mile.

The standard Prius nickel-metal hydride battery has proven to have a very long life. The expectation is that they can last seven to 10 years. The auxiliary batteries are lithium-ion phosphate and are also expected to last for many years. Significant testing is underway to determine just how long the batteries can last in a variety of driving conditions. Utilities and the automotive industry are also working to develop a “second life” for the used batteries in energy storage and electric grid support applications.

# # # #